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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,788	03/06/2002	Qing Chen	AINNO.0104	8949
22858	7590	08/18/2004	EXAMINER	
CARSTENS YEE & CAHOON, LLP			NGUYEN, VINCENT Q	
P O BOX 802334			ART UNIT	
DALLAS, TX 75380			PAPER NUMBER	
			2858	

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/091,788

Applicant(s)

CHEN ET AL.

Examiner

Vincent Q Nguyen

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Response filed on 7/26/2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 5-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant is reminded to cancel the non-elected claims 5-35.

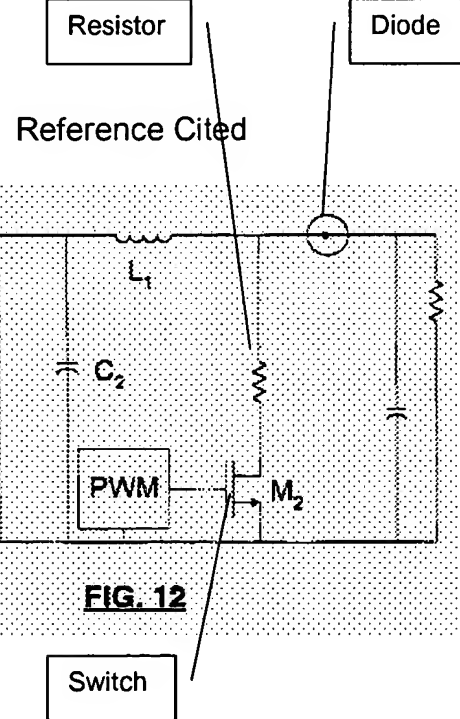
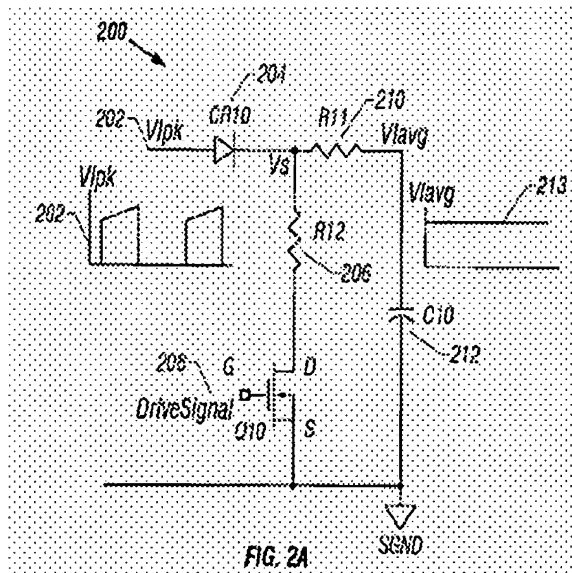
Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirst (5,789,723).

Invention Claimed



Regarding claim 1, Hirst discloses a device comprising (Figure 12) (a) a diode; (b) a resistor in series with a switch (M_2), with the resistor coupled to the diode; (c) an RC filter in parallel with the resistor and switch of element (b).

The only difference between Hirst and the invention claimed is that the claim recites the resistor coupled to the cathode of the diode in place of the resistor coupled to the anode of the diode.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to couple the resistor to the cathode of the diode in stead of coupling to the anode as taught by Hirst because coupling the resistor before or after the diode (i.e. couple the resistor to anode or couple to cathode) the function of the circuit does not change since the current, either being rectified (Resistor couples to the cathode) or not (couple to the anode), flows through the switch and will be modulated to obtain desired results.

Regarding claim 2, Hirst discloses the switch (M_2) is synchronized with an incoming peak current signal (PWM).

Regarding claim 3, Hirst discloses an average current signal (See also figure 10; figure 13; column 13, lines 35-39) is sensed across a capacitor (Current is sensed through the shunting resistor paralleling with capacitor on the right hand side of M_2).

Regarding claim 4, Hirst discloses the RC filter (Capacitor and resistor parallels in the right hand side of the resistor and switch M_2) smoothes an average current signal

(The smoothing current signal is true not only for the prior art of Hirst but also true for every prior art having filter).

Response to Arguments

4. Applicant's arguments filed 7/26/2004 have been fully considered but they are not persuasive.

In response to Applicant's argument that: "The circuit illustrated in Figure 12 of Hirst does not include all of the limitations of the claimed invention. Specifically, in Hirst the resistor in series with the switch is not coupled to the cathode of the diode. Close examination of the Hirst circuit the resistor in series with the switch is coupled to the anode of the diode. Because of the unidirectional nature of diodes, coupling the series components to the anode versus the cathode has a significant effect on current flow and discharge of those components."

As examiner discussed in the rejection of the claim, coupling the resistor to the cathode or coupling the resistor to the anode as taught by Hirst, the function of the circuit does not change. Except for the choice of whether the current being modulated is being rectified or not (which does not change the function of the circuit, as examined discussed in the rejection of claim 1 above), examiner does not see why the anode versus the cathode has a significant effect on current flow and discharge of the components.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent Q Nguyen whose telephone number is (571) 272-2234. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (571) 272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "V. Nguyen", with a horizontal line drawn underneath the name.

August 17, 2004

Vincent Q Nguyen
Patent Examiner
Art Unit 2858